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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,764

03/19/2004

Mark Johnsgard

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06/13/2008

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EXAMINER

WU, IVES J

ART UNIT

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1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/804,764	Applicant(s) JOHNSGARD ET AL.	
	Examiner IVES WU	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-25 is/are allowed.
- 6) ☒ Claim(s) 1-7, 15-19, 26 and 27 is/are rejected.
- 7) ☒ Claim(s) 8-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/5/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1-7, 15-19 and 26-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnsgard (US04986838) in view of Hashikura et al (US20050085057A1), evidenced by Han (US06090208A).

As to a scrubber interface device in fluid communication with the inlet manifold and configured to deliver the effluent gas stream from the inlet manifold to a gas scrubbing system in a scrubber inlet device in **independent claim 1**, Johnsgard (US04986838) discloses an inlet system for scrubber (Title). An effluent gas scrubbing system is disclosed having improved scrubber inlet system including a transition tube having a fluted lower portion for directing particulate carrying gas into the mist saturated scrubbing chamber of a gas scrubber (Abstract, line 1-5). As shown in Figure 2 below, the scrubber inlet system 14 is in fluid communication with inlet pipe 18, and deliver the effluent gas stream from inlet 18 to a gas scrubbing system 12.



As to a heated gas inlet configured to receive a stream of heated gas in an inlet manifold in **independent claim 1**, Johnsgard **does not teach** such manifold including a heated gas inlet as claimed.

However, Hashikura et al (US20050085057A1) **teaches** gas heating method and gas heating device (Title). This device is employed in apparatuses that process NO_x- or NH₃-containing exhaust gases discharged through semiconductor-device and liquid-crystal fabrication procedures ([0001]).

The advantage of having gas heating device to provide a hot gas into the apparatus is to make available a gas heating method, and a small-scale, energy-saving gas-heating device for implementing the heating method that enable high-speed gas heat-up without becoming corroded by the gas, make possible the direct, efficient heating of gases ([0015]). as evidenced by Han (US06090208) that plugging of effluent line of an apparatus comprising CVD chamber is prevented or substantially reduced by injecting a hot gas into the effluent line during processing (Abstract, line 1-3).

Therefore, it would have been obvious at time of the invention to install a hot gas inlet disclosed by Hashikura et al near the gas entry 16 in the gas scrubber inlet system of Johnsgard in order to obtain the above-cited advantage.

As to port including an insulating insert sleeve in **claim 2**, insulation around an exterior in **claim 3**, it would be obvious to one of ordinary skills in the art to further prevent from the clogging of gas effluent by additional preventive means such as insulating insert sleeve and insulation around exterior to keep the gas effluent from cooling in the apparatus.

As to scrubber interface device including a lower portion having a generally cylindrical interior surface in **claim 4**, Johnsgard discloses scrubber inlet system 14 including a transition tube 24 in Figure 2 above.

As to an insulated insert portion providing fluid communication between the inlet manifold and the lower portion of the scrubber interface device in **claim 4**, Johnsgard does not discloses the insulated insert portion. However, it would have been obvious to one of ordinary skills in the art to use insulated insert portion as means to keep the gas effluent from clogging due to the heat loss anywhere in the lower portion of cylindrical interior surface.

As to scrubber interface device further including a system for providing a washing fluid to the cylindrical interior surface of the lower portion in **claim 5**, Johnsgard discloses the transition gas 33 to be formed so that as fluid 35 exiting the cavity 34, it maintains a high rotational velocity as it travels down the length of the transition tube 24 in the Figure 2 above.

As to insulated portion extending into the inlet manifold in **claim 6**, Johnsgard does not disclose the insulated insert portion extending to the inlet area, however, it would have been obvious to one of ordinary skills in the art at time of the invention to extend the insulated insert

portion into the inlet area to provide maximum heat insulation to prevent from clogging by the condensation of gas effluent.

As to inlet manifold to be separable from scrubber interface device in **claim 7**, Johnsgard discloses the inlet of gas entry 16 being glued to a 1st threaded union 17a, which is in turn threadably engaged to the union nut 17b. Union nut 17b is then threadably engaged to a 2nd thread union 17c, which is glued to inlet pipe 18 (Col. 4, line 39-43). Inlet pipe 18 maybe readily removed by unthreading the union nut 17b from supply pipe 16 and removing the inlet pipe 18 (Col. 6, line 1-4).

As to source of heated gas configured to provide the stream of heated gas to the heated gas inlet in **claim 15**, Hashikura et al (US20050085057A1) discloses source of gas 12a in the Figure 6.

As to heated gas providing an inert gas in **claim 16**, inert gas comprising N₂ in **claim 17**, Hashikura et al (US20050085057A1) disclose air or a like diluent gas which would be inert gas comprising N₂ ([0039], line 8-10).

As to the temperature regulation system for the hot gas in **claim 18**, temperature sensor, controller to regulate the temperature of heated gas according to a signal from the sensor in **claim 19**, Hashikura et al (US20050085057A1) discloses preheated temperature at about 380 °C -400 °C. ([0040], line 7-9). Therefore, it would have been obvious to have temperature regulation system to control the temperature ranged from 380 °C to 400 °C, in order to effectively heat the gas effluent. It would be obvious also to one of ordinary skills in the art to have temperature sensor and controller in temperature regulation in order to regulate the temperature of the hot gas because it is well known in the art that the controlling function requires an input of controlled parameter from measuring device such as sensor and controlling device such as controller.

As to inlet manifold including a port configured to receive an effluent gas stream from exhaust line and a scrubber interface device in fluid communication with the inlet manifold to a gas scrubbing system in a scrubber inlet device in **independent claim 26**, the disclosure of Johnsgard, Hashikura et al is incorporated herein by reference, the most subject matters as claimed, have been recited in applicants' claim 1 and have been discussed therein.

As to the effluent gas stream at a 1st temperature and means for maintaining the effluent gas stream at or near the 1st temperature in **independent claim 26**, the disclosure Han is

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incorporated herein by reference, the most subject matters as currently claimed has been recited in applicants claims 1 and 18-19 and have been discussed therein.

As to the insulated insert portion in scrubber inlet device in **claim 27**, the disclosure of Johnsgard, Hashikura et al is incorporated herein by reference, the most subject matter as currently claimed, has been recited in applicants' claim 4, and has been discussed therein.

Allowable Subject Matter

(3). **Claims 20-25** are allowed.

Claims 8-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

(4). Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IVES WU whose telephone number is (571)272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

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Date: May 16, 2008

/Duane S. Smith/

Supervisory Patent Examiner, Art Unit 1797

6-6-08

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